

# Gastric Carcinoma Concealed by Paraesophageal Hernia: Case report and review of the literature.

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## Abstract

### Background:

Hiatus hernia is a frequent finding during endoscopy or imaging studies. Paraesophageal hernias account for 5–15% of all hiatal hernias and are mainly asymptomatic. When they do cause symptoms, it is usually reflective of the mechanical problems caused by the hernia. We report a rare underlying etiology for a symptomatic patient with type II paraesophageal hernia. Case description: A unique case of an 83-year-old male with progressive dysphagia and weight loss in the setting of a paraesophageal hernia harboring a gastric carcinoma is presented. This patient underwent multiple endoscopies with random biopsies of the esophagus and stomach but the malignancy was not revealed. By the time that he underwent the diagnostic laparoscopy, the gastric carcinoma had spread to the peritoneal cavity. Conclusion: Underlying mucosal disease of the hernia sac, namely occult gastric neoplasms should be considered in patients with symptomatic paraesophageal hernias. Because of the location of the type II paraesophageal hernia, endoscopic evaluation of the mucosal lining of the hernia can be challenging and thus have a low yield for accurate diagnosis. In high-risk patients, diagnostic laparoscopy for confirming the diagnosis and reduction of the hernia should be considered early in the course of the disease.

## INTRODUCTION

Hiatus hernia is defined as the herniation of elements of the abdominal cavity through the esophageal hiatus of the diaphragm and into the mediastinum [1]. Hiatal hernia can be classified into 4 major types. The most common, type I hiatus hernia, involves the herniation of a portion of the gastric cardia through the hiatal tunnel [1,2]. Types II, III, and IV hiatus hernias are all types of “paraesophageal hernias” and collectively account for 5%–15% of all hiatal hernias [1,3]. Paraesophageal hernia was first described in 1926 by Akerlund as an uncommon form of hiatal hernia [8]. In type II hernia, the gastric fundus herniates through a phrenoesophageal defect. Type III hernias have components of both types I and II hernias, with progressive enlargement of the hernia through the hiatus. Type III is more common than type II [9]. In type IV hiatus hernia, a large defect in the phrenoesophageal membrane causes other organs, such as the colon, spleen, pancreas, and small intestine to enter the chest cavity [1,3].

Patients with a paraesophageal hernia are usually asymptomatic. Post-prandial distress is the most prominent symptom in patients with a type III paraesophageal

hernia [10]. The natural history of a type II hernia is progressive enlargement of the herniated stomach until the entire stomach eventually herniates into the thorax cavity resulting in an upside-down stomach. Because the stomach is fixed at the gastroesophageal junction, the herniated stomach can rotate around its longitudinal axis resulting in an organoaxial volvulus [4]. Gastric volvulus can lead to acute gastric obstruction, incarceration, and perforation. Incarceration can develop in up to 30.4% of patients with paraesophageal hernia [12]. Rare localized hernia sac mucosal abnormalities have been reported in type II hernias. Iron deficiency anemia secondary to chronic blood loss from paraesophageal hernia and focal neoplasm of hernia sac has been reported [5]. Other localized hernia sac complications including ulceration and perforations also have been reported [11]. In the present case, we report a rare underlying etiology for a symptomatic patient with type II paraesophageal hernia.

## CASE REPORT

A previously healthy, 83-year-old man was referred to our center for further evaluation of progressive dysphagia and weight loss. Patient's dysphagia started 3 months prior to

admission and had gradually progressed from solids to liquids. He reported a 60-pound weight loss during the last 3 months. Since the start of symptoms, the patient had been hospitalized twice for severe dehydration, during which, he had three endoscopies. The endoscopies showed friable and inflamed mucosa with significant stricture at the distal portion of esophagus suggestive of esophageal carcinoma. The scope was advanced to the stomach after balloon dilation of the stricture and showed mild mucosal erythema and congestion of gastric cardia and an opening in the gastric fundus suggestive of paraesophageal hernia (Figure 1). Multiple biopsies from the esophagus and stomach during these procedures were only significant for acute and chronic inflammation. CT scan of the chest was significant for almost 2/3 of the stomach herniated into the chest in a retrocardiac fashion (Figure 2).

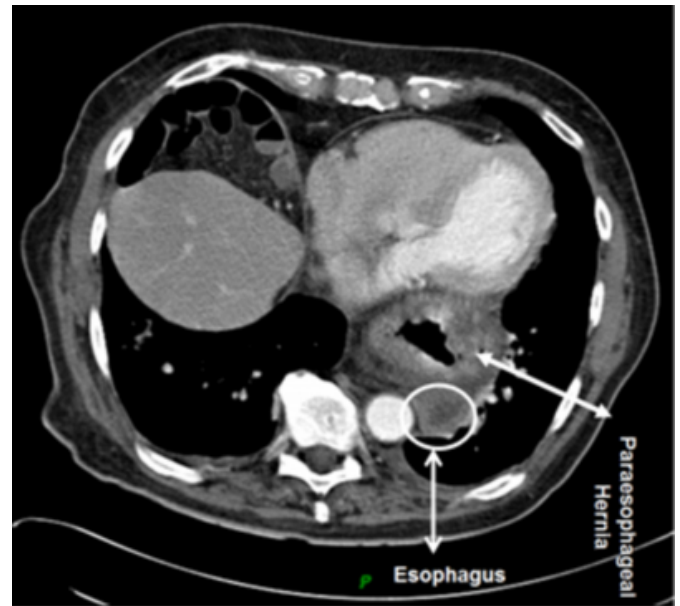
### Figure 1

Figure 1: Endoscopic view of the gastric cardia and fundus significant for the mucosal congestion and paraesophageal hernia.



### Figure 2

Figure 2: CT scan of the chest demonstrating a large paraesophageal hernia in retrocardiac area and dilated esophagus.



At our institution, endoscopic ultrasound (EUS) was attempted. The distal esophageal stricture was dilated, but we were unable to advance the scope through the stenosis. A paraesophageal hernia was evident. It was felt that patient may have had an incarcerated paraesophageal hernia so he underwent a diagnostic laparoscopy for further evaluation and possible hernia repair. During the surgery, the mucosa of the reduced hernia sac was found to be thickened with infiltration extending to perigastric fat. This was highly suggestive of gastric carcinoma. Furthermore, numerous areas of peritoneal implants were noted during the surgery. Biopsy from both of these sites confirmed the diagnosis of moderately differentiated adenocarcinoma.

## DISCUSSION

Paraesophageal hernia is relatively common, and in and of themselves, do not usually cause symptoms. Mechanical problems are the leading cause of symptoms in patients with paraesophageal hernias. Paraesophageal hernias can cause lethal complications, including gastric obstruction, gastric strangulation with or without perforation, gastric ulceration, and gastric hemorrhage [11, 12, 13]. Because of the location of the type II paraesophageal hernia, endoscopic evaluation of the mucosal lining of the hernia can be challenging, and thus yield a low accurate diagnosis.

In a thorough review of literature, we identified two other reported cases of symptomatic patients with paraesophageal

hernia due to an underlying malignancy. The first by Carr et al. reported a patient with progressive dysphagia that was found to have paraesophageal hernia withholding an esophageal adenocarcinoma [6]. The second report by Cooper and colleagues detailed a case of pseudoachalasia in a patient that was found to have paraesophageal hernia harboring a gastric carcinoma [5]. To our knowledge, this is the only other reported case of isolated gastric cancer contained in a paraesophageal hernia.

Based on this case, a high index of suspicion should be maintained for possible localized hernia sac mucosal abnormalities including concealed gastric neoplasm in symptomatic patients with paraesophageal hernia. Additionally, in high-risk patients, especially patients with alarming symptoms such as significant weight loss, a diagnostic laparoscopy for confirming the diagnosis and reduction of the hernia should be considered early in the course of the disease.

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